What Is Claimed Is:

1. A heat conductive composite sheet comprising:

(a) a heat softening, heat conductive layer containing a silicone resin and a heat conductive filler, and

(b) a heat conductive silicone rubber layer containing a heat conductive filler.

2. The heat conductive composite sheet according to claim 1, wherein said silicone resin of said layer (a) is a polymer comprising at least one unit selected from the group consisting of $RSiO_{3/2}$ units wherein R represents an unsubstituted or substituted hydrocarbon group of 1 to 10 carbon atoms, and SiO_2 units.

3. The heat conductive composite sheet according to claim 1, wherein said silicone resin of said layer (a) is comprised of a polymer comprising at least one unit selected from the group consisting of $RSiO_{3/2}$ units, and SiO_2 units, and an polydiorganopoplysiloxane comprised of R_2SiO units and terminal R_3SiO units wherein in the formulas R each represent an unsubstituted or substituted hydrocarbon group of 1 to 10 carbon atoms.

4. The heat conductive composite sheet according to claim 1, wherein said heat conductive silicone rubber of said layer (b) is comprised of a cured product of an addition reaction curable silicone rubber composition containing a heat conductive filler.

5. The heat conductive composite sheet according to claim 1, wherein said heat conductive silicone rubber of said layer (b) is comprised of a cured product of a condensation curable silicone rubber composition containing a heat conductive filler.

6. The heat conductive composite sheet according to claim 1, wherein said heat conductive silicone rubber of said layer (b) is a cured product of a radical reaction curable silicone rubber composition containing a heat conductive filler.

7. A process for producing a heat conductive composite sheet comprising:

(a) a heat softening, heat conductive layer formed of a composition comprising a silicone resin and a heat conductive filler, and

(b) a heat conductive silicone rubber layer containing a heat conductive filler, said process comprising:

providing said heat conductive silicone rubber layer of (b),

optionally forming at least one intermediate layer on top of said heat conductive silicone rubber layer of (b), and

forming a layer of said composition on top of said heat conductive silicone rubber layer of (b) or, if said intermediate layer is present, on top of the intermediate layer.

8. A process for producing a heat conductive composite sheet comprising:

(a) a heat softening, heat conductive layer containing a silicone resin and a heat conductive filler, and

(b) a heat conductive silicone rubber layer containing a heat conductive filler, said process comprising:

providing said heat softening, heat conductive layer containing a silicone resin and a heat conductive filler of (a),

forming a layer of a liquid, curable silicone rubber composition comprising a heat conductive filler on top of said heat softening, heat conductive layer of (a), and

curing said composition to form said heat conductive silicone rubber layer of (b).

9. The process according to claim 8, wherein said liquid, curable silicone rubber composition is an addition reaction curable silicone rubber composition.

10. The process according to claim 8, wherein said liquid, curable silicone rubber composition is a condensation curable silicone rubber composition.

11. A process for producing a heat conductive composite sheet comprising:

(a) a heat softening, heat conductive layer containing a silicone resin and a heat conductive filler, and

(b) a heat conductive silicone rubber layer containing a heat conductive filler, said process comprising:

subjecting a heat softening, heat conductive sheet containing a silicone resin and a heat conductive filler, and a heat conductive silicone rubber sheet containing a heat conductive filler to thermocompression bonding together.